AEROFLEX

TECHNICAL BULLETIN

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Density of Aerocel® EPDM Closed Cell Elastomeric Insulation

A common question that we receive about our EPDM elastomeric rubber is its density.

According to ASTM C534 "Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form," density is not considered a performance property.

If a manufacturer elects to publish this information, it is usually reported as a range such as 3.0 – 6.0 lbs/ft3 when measured in accordance to ASTM D1622 or D1667. Reporting a range usually does not satisfy the request. Specific values or minimums are expected and at times required.

The challenge for a closed cell elastomeric foam manufacturer with reporting densities is that they are subject to change based on numerous variables such as raw materials, ambient temperatures, relative humidity, processes, etc. Unlike a product composed of plastic or steel, they are manufacturing a flexible foam rubber material that's full of air!

Density is typically a critical piece of information needed for OEM applications that involve expected compression of the rubber and also for acoustic applications.

For mechanical system applications such as HVAC, refrigeration & plumbing piping, ductwork and equipment, focusing on core performance properties that are required by ASTM C534 such as thermal conductivity, maximum use temperature, surface burning characteristics, water vapor permeability and absorption, and corrosiveness are important considerations when selecting the best mechanical insulation product.

For these reasons, Aeroflex USA has elected not to publish densities by product line. Our densities typically come in at the lower end of the 3.0 – 6.0 lbs/ft3 range, and Aerocel® EPDM offers favorable thermal conductivity values which can reduce the required insulation thickness when compared to other mechanical insulation types.